

CLAIMS

1. A method of preparing the stable dispersion of the carbon nanotube in a liquid medium with the combined use of dispersants and physical agitation (e.g. ultrasonication).

2. The method of Claim 1 wherein said carbon nanotube is either single-walled, or multi-walled, with typical aspect ratio of 500-5000.

3. The method of Claim 1 wherein said carbon nanotube is not required, but may optionally be surface treated to be hydrophilic at surface for ease of dispersing into the aqueous medium.

4. The method of Claim 1 wherein the said dispersant is soluble in the said liquid medium.

5. The method of Claim 1 includes the two-step approach: dissolving the said dispersant into the said liquid medium first, and then adding the said carbon nanotube into the above mixture while being strongly agitated or ultrasonicated.

6. The method of Claim 5 where the carbon nanotube is added into the liquid while being agitated or ultrasonicated, and then the surfactant is added.

7. The method of Claim 1 wherein said liquid medium can be a petroleum distillate or a synthetic petroleum oil.

8. The dispersant for the said liquid medium of Claim 6 is of the type used in the lubricant industry, or it is a surfactant or a mixture of surfactants with low HLB (<8), preferably nonionic or mixture of nonionic and ionic surfactant. More typically, the said dispersant can be the ashless polymeric dispersant used in the lubricant industry.

9. The dispersant of Claim 7 is included in a dispersant-detergent (DI) additive package typical sold in the lubricant industry.

10. The method of Claim 1 wherein said liquid medium can be water or any water based solution.

11. The dispersant for the said liquid medium of Claim 8 is high HLB (>10), preferably nonylphenoxypoly-(ethyleneoxy)ethanol-type surfactants.

12. The uniform dispersion with designed viscosity obtained from the method of Claim 1 of nanotube in petroleum liquid medium.

13. The uniform dispersion in a form as a gel or paste obtained from the method of Claim 1 of nanotube in petroleum liquid medium or aqueous medium.

14. The uniform dispersion in a form as a grease obtained from the method of Claim 1 of nanotube in petroleum liquid medium or aqueous medium.

15. The uniform and stable dispersion in a form containing dissolved non-dispersing, "other" compounds in the liquid medium of Claim 6.

16. The uniform and stable dispersion in a form containing dissolved non-dispersing, "other" compounds in the liquid medium of Claim 8.